



UKRR: a collaborative collection management success story

It is worth noting that all the material in this paper is adapted from, and appears in greater length in, the UKRR Final Report.¹

This article summarizes the achievements of the United Kingdom Research Reserve (UKRR) project, which was established in 2007 to explore whether, through collaborative documentation, preservation and deduplication of low-use print journals, it would be possible to realize benefits through the generation of space savings across the UK's Higher Education libraries. In total, the project received £11,581,672 in funding from HEFCE (now Research England).

UKRR was managed by Imperial College London in partnership with the British Library (BL) and between 2007 and 2019, 35 further libraries participated in the project. UKRR ran in three phases and has now transitioned to a service delivered by the BL which is available to libraries across the UK.

During all three phases of the project, UKRR supported the processing of nearly 130,000 metres of print journal materials and enabled the release of nearly 98,000 metres of shelf space across the 36 libraries. Print copies of scarce titles were preserved, nearly 10,000 individual journal issues from 8,000 journal titles helped fill gaps in the BL's own collection and data for over 300,000 individual journal issues was enhanced in the BL's catalogue. When calculating the capital and recurrent value of the space released amongst the participating libraries, it is estimated that the project delivered £4.04 in savings for every £1.00 of funding received.

Keywords

Collaborative collection management; HEFCE; UK Research Reserve (UKRR); libraries; efficiency savings; space savings

Introduction

UK Research Reserve (UKRR) was a project through which Higher Education (HE) libraries collaborated to manage physical journal holdings, with the aim of releasing space in libraries while preserving the national print research collection. UKRR was started as a partnership between HE libraries, the British Library (BL), and the Higher Education Funding Council for England (HEFCE), the project funder. Although the model changed slightly from phase to phase, essentially, libraries selected the material that they no longer needed and submitted it to the BL as a 'list' of 'offered holdings'. The BL then checked their collections to ascertain whether any of the offered holdings matched gaps in their holdings, as well as whether they were 'scarce' across the UKRR member library collections. Submitting libraries were then advised what they should do with this material, whether it should be transferred for retention by the BL, retained by the submitting library, or whether the library could safely dispose of the material in the knowledge that it was sufficiently preserved across the community.

This paper gives an overview of the history of the project, outlines the context within which it came about, and considers each of the three phases and how the models used changed over time. It then discusses *some* of the key findings. It finally considers the sustainable legacy, the lessons learned, and the exploratory monographs work undertaken in Phase Three. For a more detailed discussion of the project, please see the full UKRR Final Report and the associated data set.²



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Brief history of project

Context: the need for a collaborative approach to the management of print journals

The context for the UKRR project was a set of specific and shared challenges faced by UK academic libraries in the early 21st century. The main challenge was a shortage of space, with physical collection growth impacting upon the types of space that libraries were able to offer. Compounding this was a general growth in student numbers,³ as well as a growth in student satisfaction initiatives, including those in libraries. Such factors created a pressing need for libraries to respond, at a time when gradual changes in research behaviour meant that users were becoming more accepting of e-resources, particularly journals, instead of print.⁴ Simultaneously, journals were becoming more widely available electronically, with publishers also offering back-files of pre-1997 content. Together these presented an opportunity to consider the future of physical collections in a way which had not previously been possible. The concept of physical collection sharing was a response that many consortia around the world found to be a useful way in which to approach and solve the problems that these challenges presented.

The challenges to be overcome for collaborative deduplication of print journals

That UKRR needed a project to support it largely stemmed from the often poor quality of metadata for journals, making a data-driven approach to collection management highly problematic. Few libraries would document journals to issue level. Sometimes a library's metadata records for a journal would lack information about the start and end dates of the run, as well as information about any gaps. An added challenge was that journals often changed titles, split and rejoined, sometimes multiple times over the course of their production. Yet a further challenge was a cultural one: disposal of library content, even low-use content duplicated across multiple institutions, can be perceived as an act of barbarism and philistinism by librarians and researchers alike.

'disposal of library content ... can be perceived as an act of barbarism and philistinism'

UKRR therefore set out to create robust and trusted processes while individual libraries engaged in meaningful dialogue with all stakeholders.

Phase One

Starting in 2007, the pilot phase tested processes and established the full business case. The project received £709,000 funding in this phase, in which eight libraries were involved, and a process consisting of eight steps was developed:

- candidate journals for deduplication selected by the university
- local holdings data prepared for submission
- submitted holdings checked in the Serials Union Catalogue (SUNCAT) and HE library catalogues
- submitted holdings checked against the BL collection
- retention categories assigned
- requested material sent to the BL to fill gaps
- unwanted titles disposed of
- 'reserve copies' transferred to BL or accessioned into the collection of a designated HE library.

While much of this process continued to be used in future phases, the last stage was changed with 'reserve copies' held by the offering library, not transferred elsewhere.

- 3 At the end of Phase One, a review of the phase⁵ was completed by the independent consultants CHEMS Consulting, which considered how UKRR had provided value return on investment and made recommendations for the future. It acted as the basis for the business case for further funding from HEFCE.

Phase Two

The second phase (2009–2017) embedded the processes developed in Phase One and adapted for Phase Two, developed systems to support the processes and scaled beyond the pilot libraries. HEFCE provided £9,836,000 funding during this phase. Phases Two and Three were run using (broadly) six-monthly cycles during which libraries submitted lists of material.

A key change in the model for Phase Two was that the collections of the UKRR Member Libraries (of which there were 29 in Phase Two) and the BL were all considered as part of the UKRR collection. Any holding offered by a Member Library was subject to two checks: scarcity (assessing whether fewer than the one BL copy and two other copies were held) and BL shelf checks (to assess whether there were gaps in the BL collection).

During this phase, Member Libraries were charged a membership fee based on their Jisc band, but then claimed funding back based on the linear shelf space saved by material ultimately accepted for submission, at a rate of £26 per metre. From Phase Two Cycle 12, in early 2015 onwards, this funding was removed, but the momentum was such that libraries continued to submit.

An important piece of UKRR infrastructure was developed during this time: the Linked Automated Register of Collaborative Holdings (LARCH). It was through LARCH that lists were processed, and it also stored all the granular data about these submissions from which it was possible to undertake analyses. The data output from UKRR is openly available.⁶ LARCH was part of the legacy of UKRR and was transferred to the BL and now supports their service.

Phase Three

This final phase of UKRR, a stand-alone project running from 2017–2019, aimed to widen the scheme beyond HE for journals, to explore extensibility to low-use monographs, to refine the processes further, and to ensure a smooth transition from project to BL service. This final phase received £1.14 million funding from HEFCE/Research England.

'a shift away from membership to an on-demand model'

The key change from Phase Two to Three was a shift away from membership to an on-demand model, meaning that any UK library could, and was encouraged to, submit material. This led to the introduction of categories of library: Holding Libraries (HL), Principal Holding Libraries (PHL), and Contributing Libraries (CL). HLs were members from Phase Two, and were required to retain material, and their collections were used for scarcity checking. PHLs (Oxford and Cambridge) had the same responsibility as HLs but were also required to ingest material from CLs. CLs were new to the project and their collections were neither scarcity checked, nor were they required to retain material but instead could send it to PHLs.

Key outcomes and findings

Space and financial savings

During all three phases of the project, UKRR supported the processing of nearly 130,000 metres of print journal materials and enabled the release of nearly 98,000 metres of shelf space across the 36 libraries. While this only just begins to address the anticipated future shortfall of 450,000 metres predicted in the Phase Two business case, it is a large step in the right direction.

- 4 UKRR has delivered an estimated £4.04 in savings for every £1.00 of funding received with capital savings estimated at £29,649,000, accrued recurrent savings at £17,143,000 and with ongoing recurrent savings in the region of £2,831,000 p/a. The aforementioned CHEMS report proposed a means of calculating the estimated estates savings (both recurrent and capital) achieved by libraries by first converting linear metres into square metres ($1 \text{ m}^2 = 6.6 \text{ m}$). It was estimated that 1 m^2 achieves circa £191 recurrent savings per annum, and circa £2000 capital savings.

This space was released with two main ends: increasing the number of study spaces at libraries to cope with student growth and annual visits to UK academic libraries,⁷ and broadening the types of spaces available. While library users show an unwavering desire for quiet, individual study spaces, changing user behaviour and changing curricula mean there is a demand for different types of space, including informal collaborative spaces, and bookable group study rooms with AV equipment. The UKRR Final Report⁸ contains 14 case studies, examining the experience that individual libraries had with UKRR, including what they were able to do with space released.

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Print preservation and culture change

Sight should not be lost of the other critical objective of UKRR: preserving a national research collection, to be drawn upon by any researcher in the UK and beyond. Among them, the BL and the participating libraries ensured the retention of loan and preservation copies of material from 28,655 journal titles and material from 7,951 titles went to fill gaps in the BL's own loan collection.

Detailed analysis of the materials processed through UKRR showed that material from 16,503 titles was considered scarce (meaning that fewer than three copies were held across the UKRR community).

Over time the profile of UKRR participants changed from Research Libraries UK (RLUK) libraries only (Phase One), more non-RLUK libraries (Phase Two), and then only non-RLUK libraries joining during Phase Three. This shows that the concept of UKRR is not just useful to large research university libraries, many (but not all) of which took part over the 12 years, but that the UKRR concept is useful across the HE library community, giving the sustainable service real scope to serve a number of institutions. UKRR also was a founder member of an international community of collaborative projects, the European Print Initiatives Collaboration (EPICo).

Data – Master List and Phase Three data project

Data was central to the success of UKRR, ensuring that correct preservation decisions were made, and so it is fitting that two key outputs of the project have been a data set and a large-scale data enhancement.

The data set, entitled the Master List⁹ and part of the sustainable service, solved the two problems of cataloguing inconsistencies between libraries and journal title changes over time by grouping these titles together under an overlap number which allowed for more effective retention decision-making, as any submission could be matched against this list and more effectively scarcity checked.

A tranche of funding in Phase Three was used for the Phase Three Data Project, which added issue-level information for over 3,700 pre-1987 journals whilst decreasing the need for shelf checks during a more streamlined BL service. It also delivered an improvement for researchers, making the BL's collection more discoverable.

Conclusions based on data analysis

Analysis of the data contained in the Master List has allowed for insight into the submissions and has identified some trends. The main ways in which the data was analysed was by submission profile (e.g. length of lists, length of holdings) and by retention levels. Some of the findings are outlined below.

5 As seen in Figure 1, a general trend towards shorter journal runs being offered was noted. The trend was observed both at the individual library level, where libraries would not surprisingly start offering journals with longer print runs and therefore more scope for space savings, before turning to shorter runs of journals, and also across the project as a whole as many libraries made submissions in multiple phases/cycles. Once these longer runs were completed and offered, libraries would move towards material which was trickier to process.

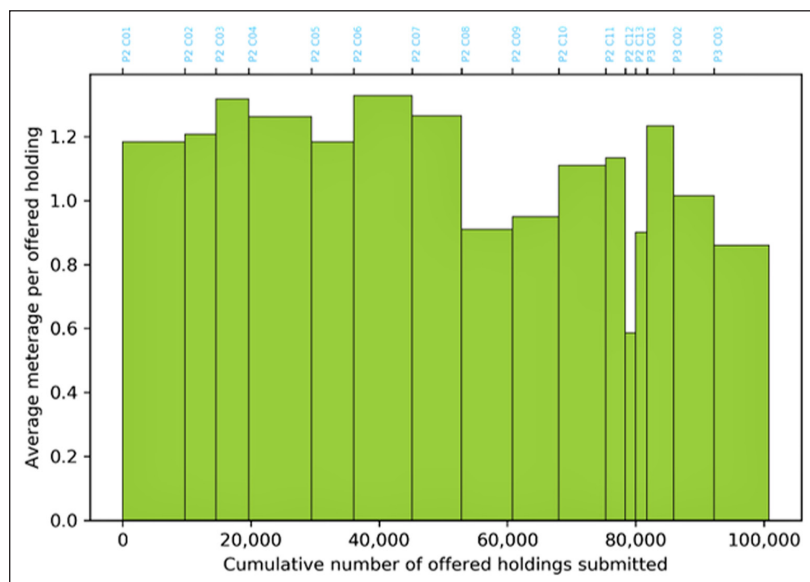


Figure 1. Meterage per offered holding by cycle

Analysis was undertaken on the retention statuses given over time. In Figure 2, each point represents a list submitted to UKRR. A point's position on the x-axis represents the cumulative number of holdings submitted by that library after the submission of that list, so the further along the axis it is, the more material that library had submitted. A point's position on the y-axis represents the percentage of material which was given a retain status, so the higher it is on the axis, the greater the percentage of retain statuses. Figure 2 has a linear regression fitted to it, which indicates a relationship between the cumulative number of holdings offered and the percentage given a retain status. Not surprisingly, as a library submitted more material, the percentage of material that was given a retain status increased. The assumption here is that as libraries submit more material, they contribute more esoteric parts of their collections which are scarce across the UKRR partners and so are more frequently required to retain, or to send to the BL for retention.

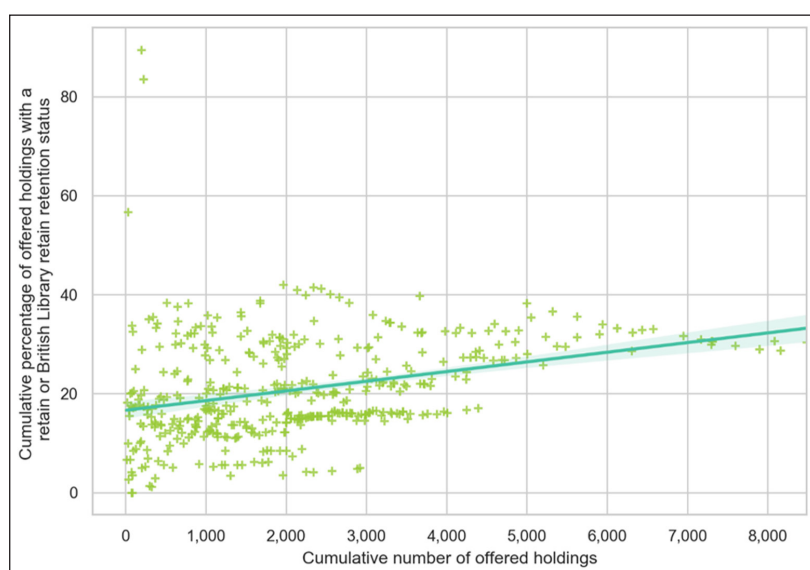


Figure 2. Cumulative percentage of offered holdings given a retain or BL retain status. (Excludes Oxford and Cambridge due to their policies of never disposing a final institutional copy of journal material)

- 6 The analysis also considered how frequently journal material was offered that was a new title to UKRR. Over the first half of Phase Two, this percentage continued dropping before plateauing at a higher level, before then dropping and seemingly beginning to increase again. (See Figure 3.) This ties in with the supposition that libraries initially submitted longer runs of widely held material, before eventually moving into the more esoteric parts of their collections, as shown by the growth in the latter cycles in holdings offered that were new to UKRR.

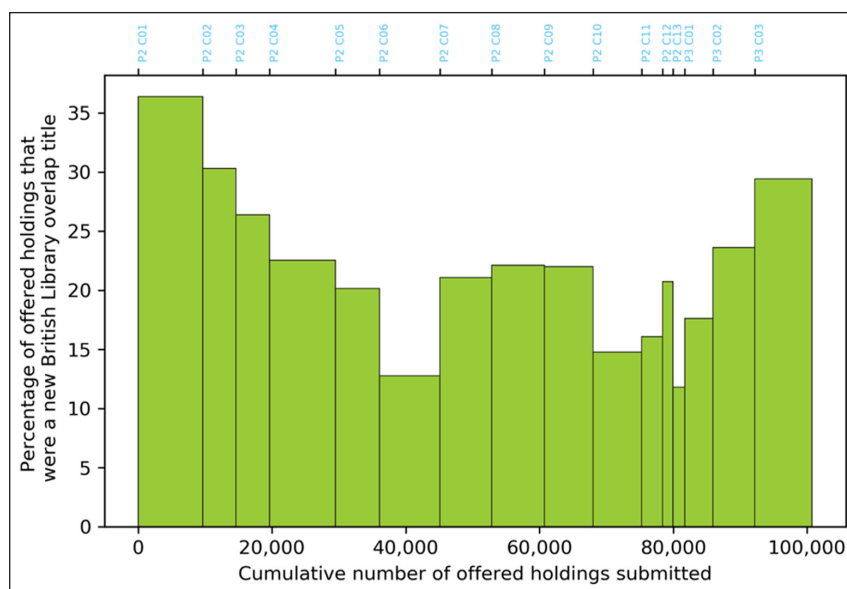


Figure 3. Percentage of offered holdings in each cycle that were new to UKRR

Lessons learned and future opportunities

Sustainable legacy

For UKRR to become a sustainable service, it was essential to develop agreed processes, systems and data and a collaborative approach to retention. These were achieved as follows:

- Service: a UKRR service was developed and offered by the BL who, as part of Phase Three of the project, refined processes and re-platformed the UKRR system, LARCH.
- Enhanced data arising from the UKRR project was made available through both the BL's catalogue and via the new Jisc National Bibliographic Knowledgebase (NBK).
- RLUK put in place a Collaborative Collection Retention Agreement to ensure the continued preservation of scarce research materials held by them.
- An overview of the process by which this new service was developed can be found on the BL website and in Appleyard.¹⁰

Lessons learned

Over 12 years, during the design of the new BL service, much was learned and drawn upon. Understandably, submission and processing were key aspects of this. There were issues that made processing harder, meaning that the team at the BL were not always able to work at capacity. These included an oscillation in supply across cycles. Each of the first ten six-month cycles of Phase Two had a target of 10,000 metres to be submitted and processed, but the actual amount ranged from 5,921 metres to 12,362 metres, meaning that the team were at different times over- and under-stretched. A related issue was around the ease of processing: during the project there was an aim for the average length of journal holding

7 submitted to be 1 metre, which allowed for very short runs to be offset by longer ones. Often this target was missed, and shorter runs meant more intensive shelf checking. Another processing issue was about whether or not material was submitted with an ISSN, those with ISSN information being much easier to match against previous submissions.

Beyond these submission-related lessons, another key learning point was around advocacy. While a culture change in using electronic instead of physical material has been noted, there was still a need to approach deselection of physical material diplomatically at an institutional level throughout the project. There is another side to advocacy as well – encouraging institutions to participate and submit material to UKRR. With only 36 institutions having participated by the end of the project, the stand-alone service had the scope to engage many more institutions across the UK. For some context, there are 182 SCONUL members, and this is even before applying the benefits to non-SCONUL research libraries.

Monographs

During Phase Three, work was undertaken to explore how UKRR processes might be extended into monographs in order to enable the preservation and deduplication of further materials. This work identified an appetite for continuing discussions, with considerations including shared storage, the improvement of metadata for monographs and links between print and digitized formats. Monographs have a real capacity to create and preserve a nationwide research collection. Studies by RLUK and White Rose Libraries suggest that overlap between monograph collections might be lower than originally thought.¹¹

UKRR funded two reports investigating this issue. The first, by consultants Information Power, recommended the creation of a shared collection to be held at the BL's Boston Spa site.¹² A second report¹³ explored HE library attitudes towards collaborative management of monographs and found that appetite for work of this type exists, and tentatively reached similar conclusions to the Information Power report, then going on to recommend various pieces of subsequent work. However, applying these principles to monographs is complicated, so many possible solutions can be considered including an approach whereby libraries simply retention-tag using agreed terminology (considered by Copac Collections Management Community Advisory Board [CMCAB]), and then making these tags discoverable through Library Hub Discover/Compare. Another possible option, considered by some consortia, might be for a hub-and-spoke model, with copies held consortially as well as, potentially, by the BL.

Conclusions

After being in existence for 12 years, UKRR had really become part of the research landscape in the UK and libraries still required the infrastructure it offered to assist in managing their physical collections. Towards the end of the project, when advocacy and consultancy was undertaken with the HE library community, there was interest in using the service not only from institutions which had participated already but also from ones yet to join. Indeed, the space and preservation benefits achieved are clear, and can continue to be gained by the community – there is still material that can be preserved for the researchers of the present and the future and there is still material that can be safely disposed of in order to ensure that HE libraries adapt to what their students need.

A conclusion is always an opportunity to consider what might come next, and the collaborative management of monographs is certainly one such opportunity, but the BL was,

'the scope to engage many more institutions across the UK'

'applying these principles to monographs is complicated, so many possible solutions can be considered'

8 at the time the project was being wrapped up, also considering other similar projects, such as a digital UKRR model, similar to their EThOS¹⁴ service for PhD theses. The three phases of UKRR saw changes to the initial model, and adapting to better deliver for the community is something that needed to be continued in the subsequent service, bearing in mind some of the challenges and lessons learned as well as the need to adapt to a reduced team and new processes.

In discussing the benefits and the project at a high level, it might be easy to overlook the fact that these successes were built on the back of hard physical work and intricate and methodical desk work taking place across the country. This included shelf checking, data entry, packing, disposal and, perhaps above all, the stakeholder engagement needed to shift mindsets from one where disposal was considered a barbaric act to one where collective collaboration achieves preservation, discoverability and assured long-term access. This has been the basis for a true collaborative success.

'collective collaboration achieves preservation, discoverability and assured long-term access'

Data accessibility statement

The Master List of all 28,655 titles offered as part of UKRR has been made freely available as a data set for further analysis by the community. It can be found at <https://doi.org/10.5281/zenodo.3368465>

Abbreviations and Acronyms

A list of the abbreviations and acronyms used in this and other *Insights* articles can be accessed here – click on the URL below and then select the 'full list of industry A&As' link: <http://www.uksg.org/publications#aa>

Competing Interests

The authors have declared the following interests:

Theo Stubbs is a librarian at Imperial College London from where the UKRR project was managed, and was seconded part time to the Imperial UKRR team from November 2018 until June 2019.

Chris Banks is Assistant Provost (Space) and Director of Library Services at Imperial College London, from where the UKRR project was managed and was Head of UKRR from 2016 until the project transferred as a service to the British Library in 2019.

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